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Yang-Baxter deformations beyond coset spaces (a slick way to do TsT)

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Abstract: Yang-Baxter string sigma-models provide a systematic way to deform coset geometries, such as $AdS_p \times S^p$, while retaining the σ-model integrability. It has been shown that the Yang-Baxter deformation in target space is simply an open-closed string map that can be defined for any geometry, not just coset spaces. Given a geometry with an isometry group and a bivector that is assumed to be a linear combination of antisymmetric products of Killing vectors, we show the equations of motion of (generalized) supergravity reduce to the Classical Yang-Baxter Equation associated with the isometry group, proving the statement made in [1]. These results bring us closer to the proof of the "YB solution generating technique" for (generalized) supergravity advertised in [1] and in particular provide an economical way to perform TsT transformations.

Keywords: Classical Theories of Gravity, Integrable Field Theories, Supergravity Models

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